

Combined Heat & Power Multifamily Performance Program

SEA Park West 150 kW CHP System

Project Overview

Sea Park West is an affordable housing complex consisting of 362 units. Sea Park West is located overlooking the bay at Coney Island, in an Urban Renewal Area of Brooklyn, New York. The development was originally part of the Mitchell-Lama program created in the later 1950's to provide affordable housing to moderate and middle income families. The owner, The Arker Company has maintained affordable status by investing nearly \$60,000 per unit between 2002 and 2004. HUD continues mortgage interest reduction payments under the Section 236 Rental Housing Assistance Program in order to allow for the much needed rehabilitation of these aging properties.

Faced with rising energy costs and a goal to maintain affordable status, Sea Park West applied and was accepted into NYSERDA's Multifamily Building Performance Program (MPP) in 2007. Steven Winter Associates (SWA), acting as NYSERDA's MPP Partner, developed a comprehensive cost effective work scope designed to achieve a 26% reduction in energy consumption. Included in that work scope was the installation of two 75 kW CHP units. The system was designed to provide onsite generation of electricity with recovered thermal energy. The system was implemented for the production of domestic hot water (DHW) with additional heat contributing to the high temperature steam heating system through heat exchangers.

The project selected to install two *Tecogen model # CM-75, Low Emissions Internal Combustion Natural Gas Engine Induction Generators*.

Financial Incentives and Performance

NYSERDA provided funding as part of the Multifamily Building Performance Program. In addition to the base incentives, an additional or advanced incentive of \$150,000 was included for the installation of a CHP system. The total NYSERDA construction incentive is estimated to be \$449,640, on a work scope of \$1,074, 270. Should Sea Park West achieve and document that they achieved the minimum post construction program performance improvement of 20% overall reduction in energy usage, they will be eligible to receive a NYSERDA performance bonus and the New York Energy Smart label for their building.

The Detailed Energy Analysis (DEA) performed by SWA projected:

Natural Gas Input	12,298	MMBTU's/Year
Electric Output	3,163	MMBTU's/Year
DHW Thermal Output	4,039	MMBTU's/Year
Steam Thermal Output	979	MMBTU's/Year
Unrecovered Thermal	4,117	MMBTU's/Year

Between July 3, 2006 and July 3, 2007 the building recorded the following utility usage:
Natural Gas usage of 261,285 Therms at a total cost of \$342,283 or \$1.31/ Therm on average
Electricity usage of 2,078,000 KWh at a total cost of \$353,278 or \$0.17 /KWh on average

The CHP system is estimated to save approximately \$69,388 per year based upon estimated utility costs. The system has a calculated savings to investment ratio (SIR) of 1.8 and a simple payback period of 6.4 years, with a life cycle savings estimated at \$388,849 based upon a 15 year life cycle.

More information

The CHP system went online and began production in 2009. The project will be monitored for the next few years. Progress can followed at, <http://chp.nyserd.org/home/index.cfm>
For information on other NYSERDA CHP programs please visit <http://chp.nyserd.org/home/index.cfm>